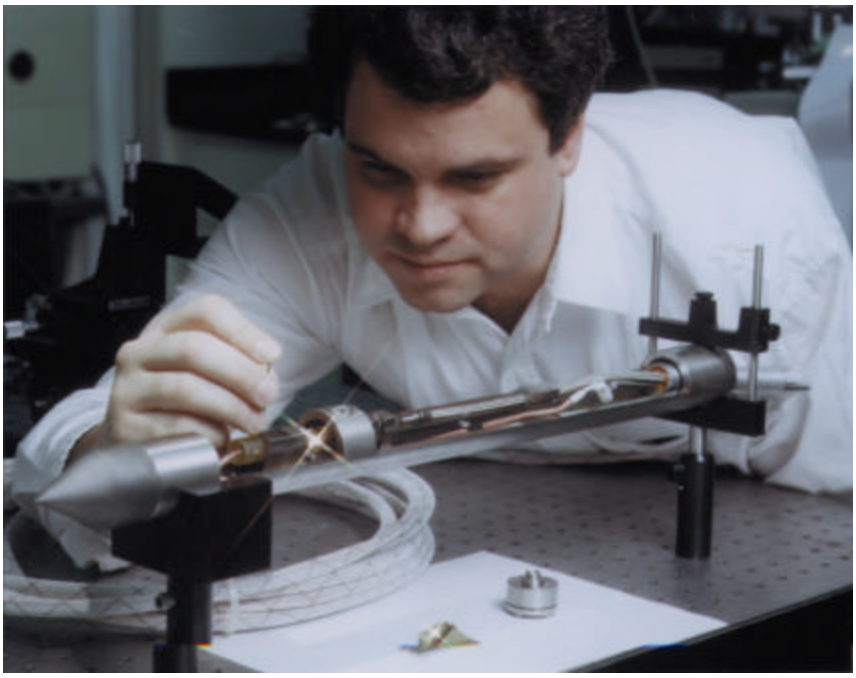
FIBER-OPTIC CHEMICAL SENSORS



The Naval Research Laboratory has developed several different types of fiber-optic chemical sensors for detecting pollutants and other chemicals in both the air and water. Sensor types include fiber-optic Raman probes for both dense nonaqueous liquids and trace levels of chlorinated hydrocarbons. Both sensors exhibit fully reversible responses.

Advantages/features include:

- In situ measurement
- Real-time measurement
- Remote operation
- Highly sensitive
- Small size
- Mutiplexing

Applications include:

- Detection of heavy metals in water (e.g., part per billion (ppb) levels of copper and mercury in water have been demonstrated)
- Detection of dense nonaqueous liquids (e.g., subsurface pockets of chlorinated hydrocarbons)
- Determination of free water in fuels, which can significantly decrease jet engine wear.

Licenses are available to companies with commercial interest.

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